W. E. ALLEN.

WINDOW CLEANING DEVICE.

APPLICATION FILED DEC. 14, 1909.

951,431. Patented Mar. 8, 1910.

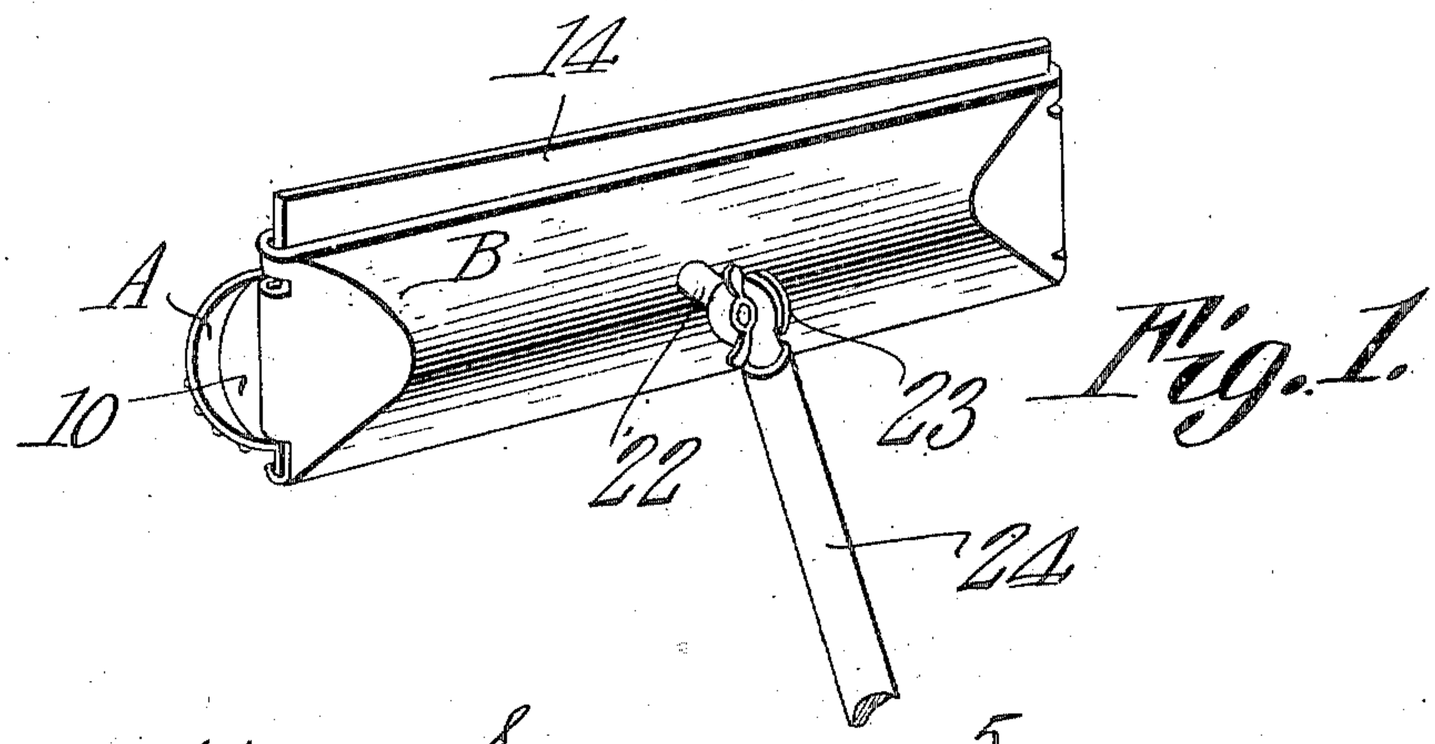

Fig. 1.

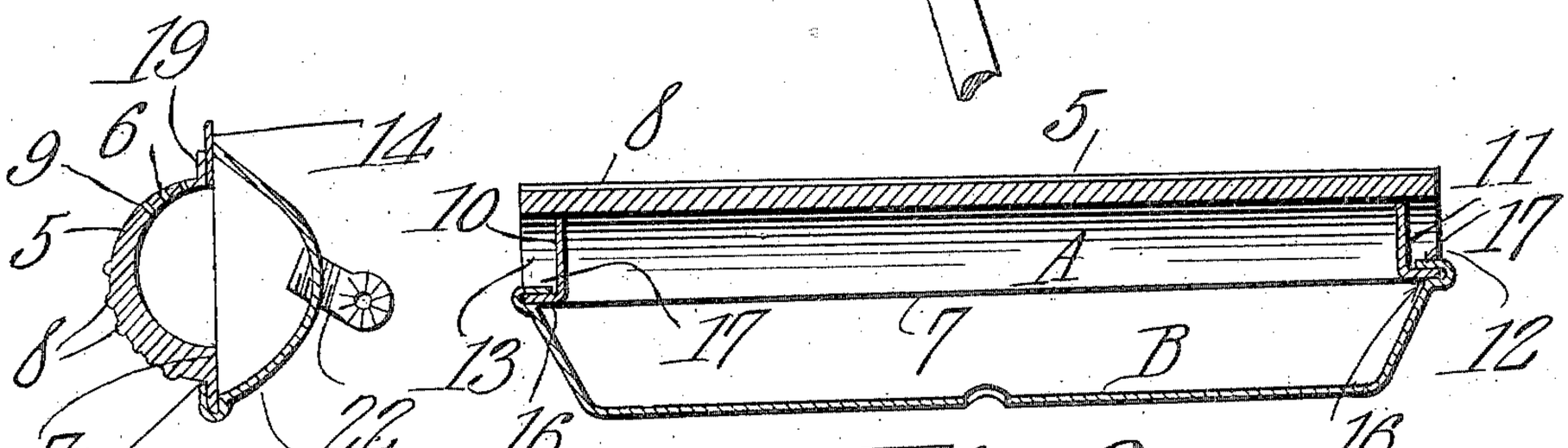

Fig. 3.

Fig. 2.

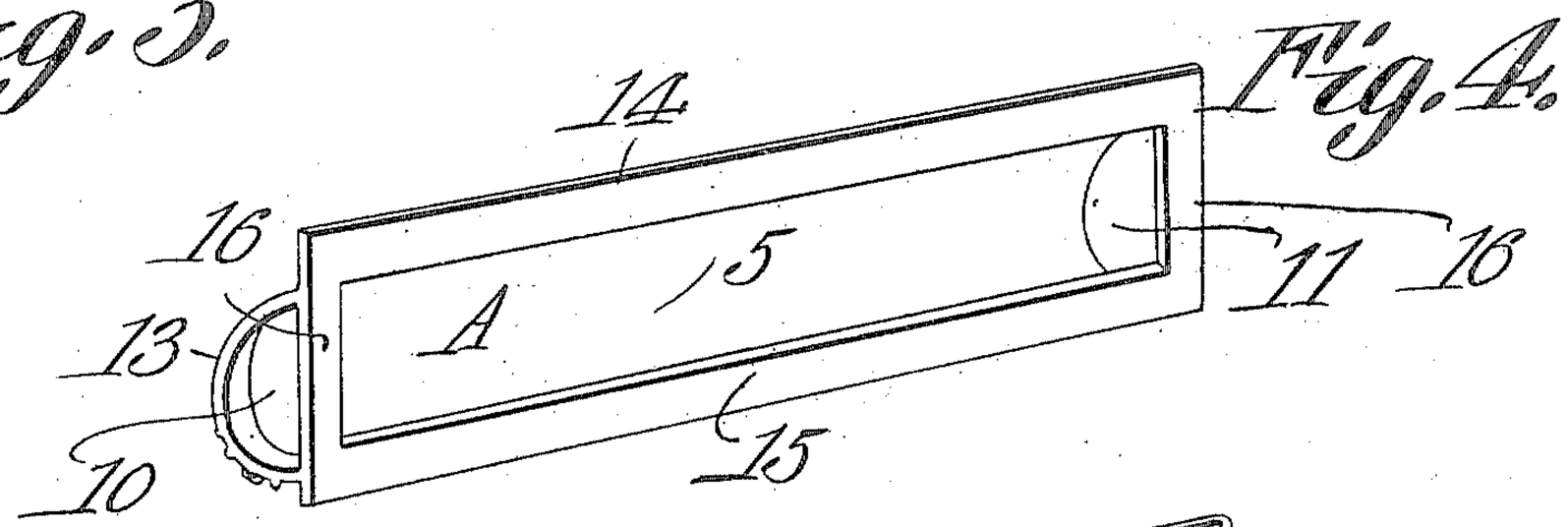

Fig. 4.

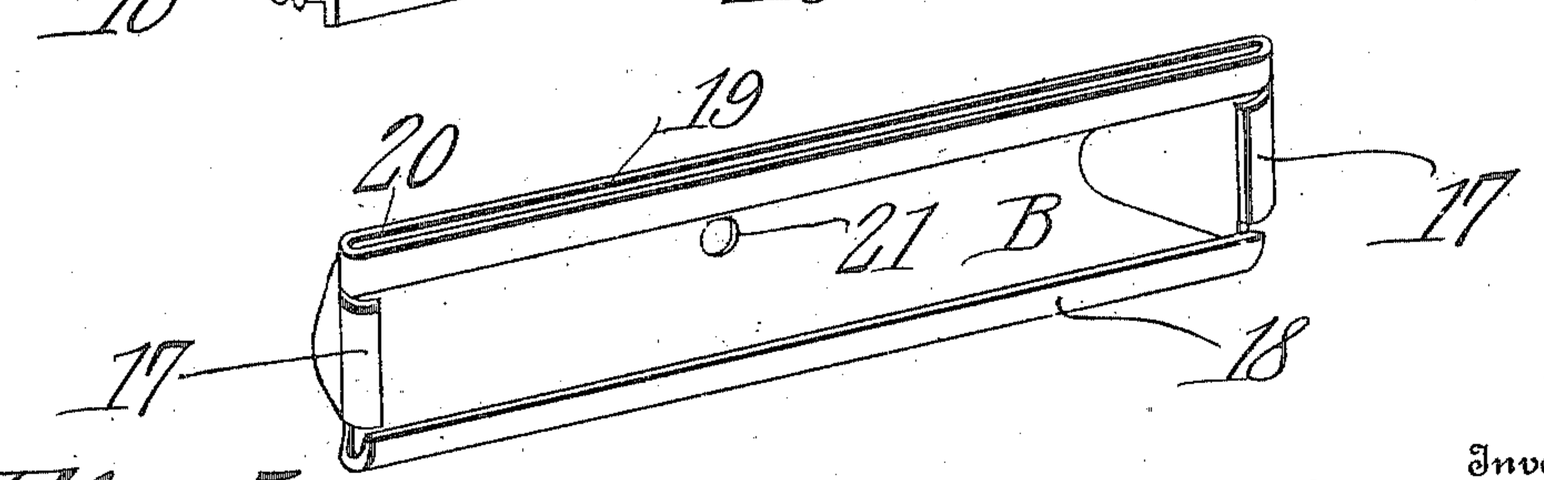

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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WINDOW-CLEANING DEVICE.

951,431. Specification of Letters Patent. **Patented Mar. 8, 1910.**

Application filed December 14, 1909. Serial No. 533,071.

To all whom it may concern:

Be it known that I, WALTER E. ALLEN, a citizen of the United States, residing at Hooper, in the county of Costilla and State of Colorado, have invented a new and useful Window-Cleaning Device, of which the following is a specification.

This invention relates to improvements in window washing devices of that general class described in United States Letters Patent, issued to me on the 21st day of January, 1896, and has for an object to provide a window cleaner having a flexible washing member and a rigid frame or back for the washing member, the two coöperating to form a reservoir that will carry a supply of water sufficient for washing a number of windows.

A further object is to provide an arched washing member having its end walls set back from the end edges of the member so that the joints between the end walls and arched working surface will not be worn away as the arched surface is worn away and will be further relieved of considerable of the strain resulting from the yielding of the arched working surface as it travels over the window, so that leakage through said joints is effectively prevented.

A still further object is to provide a rigid arched back having marginal clamping portions to securely hold the washing member whereby the use of cement or other deteriorative connecting means is obviated.

With the above advantages and other objects in view, my invention embraces the structure illustrated in the accompanying drawing, described in the following specification and pointed out in the appended claims.

In the accompanying drawings forming part of this specification, Figure 1 is a perspective view of my improved window washer. Fig. 2 is a longitudinal sectional view through the window washer. Fig. 3 is a transverse sectional view through the window washer. Fig. 4 is a perspective view of the arched washing member. Fig. 5 is a perspective view of the rigid back.

Like characters of reference designate similar parts in the views shown.

Referring to the parts by their reference characters, A designates a flexible washing member and B a rigid frame or back for supporting the washing member, the two coöperating to form a reservoir. The washing member A is formed in a single piece and from any suitable yielding material, but preferably from rubber. The washing member comprises an arched wall 5 which gradually increases in thickness from one of its longitudinal edges 6 to its opposite longitudinal edge 7. This increasing thickness of the wall causes the wall to resist compression at its thickened end whereby a slightly yielding washing surface is presented to the window. A plurality of longitudinal ribs 8 are formed on the washing surface of the wall which facilitate the removal of the dirt and saves the washing surface from wear. Formed in the arched wall 5 is a series of openings 9 through which water flows from the reservoir onto the washing surface of the wall and is impeded in its escape therefrom by the ribs which carry the water over a large area and thus promote the economic use of the water in the reservoir. The open ends of the arched wall 5 are closed by end pieces 10 and 11 which are approximately semi-circular in contour and are set back from the end edges 12 and 13 of the arched wall, as shown. By this arrangement the joint between each end piece and the arched wall is not subject to wear as the washing surface is rubbed over the surface of the window as would be the case were the end walls flush with the end edges of the arched wall. It may be seen by reference to the drawing that there is a portion of the arched wall which extends beyond the end walls and tends to resist the compression of the arched wall so that the end walls are not bulged to as great an extent by the compression of the arched wall as is usual where the end walls are flush with the end edges of the arched wall. The strain upon the joints between the arched wall and end wall is thus minimized and as said joints are disposed remote from the wear surface of the washing member there will be less tendency for leaks to be sprung in the joints than usual. Formed upon the longitudinal edges of the arched wall is a pair of laterally extending flanges 14 and 15, the flange 14 being extended considerably beyond the outer surface of the arched wall to form a convenient scraper or drier. Formed upon the longitudinal edge of each end wall is a flange 16 which is sufficient in width to extend to the plane of the adjacent end edge of the arched wall and

serves to reinforce and strengthen the end pieces to resist the yielding movement of the arched wall and also to provide a convenient ledge to which the back or supporting frame B may be clamped.

The back B is preferably formed from metal and is arched in contour, as shown, whereby to form with the washing member a reservoir that will contain a sufficient amount of water to wash a number of windows. Formed upon the end edges of the back B are hooked members 17 which are engaged over the flanges 16 of the end pieces and are then bent to tightly clamp the said flanges and form a water tight joint therebetween. Formed upon one longitudinal edge of the back is a hooked portion 18 which is engaged over the flange 15 of the washing member and is then bent to tightly clamp the flange. Disposed adjacent the opposite longitudinal edge of the back is a plate 19 so spaced from the longitudinal edge as to form a slot 20 sufficient in size to receive the window scraping member 14. The plate 19 snugly bears against the opposed lateral face of the scraping member and reinforces the same.

In assembling the parts the scraper 14 is inserted through the slot 20 when the end flanges 17 and longitudinal flange 18 may be engaged over the end and longitudinal flanges of the washing member and bent to tightly clamp the same. The back and washing members are thus secured together without the use of cement, bolt screws or other fastening devices. Formed in the back is a threaded opening 21 to receive a lug 22 which terminates in a swivel head 23 to receive a handle 24, as shown. The washing device may be adjusted to any desired angular position relatively to the handle 24 so as to permit of its effective manipulation over the window. The lug 22 may be disengaged from the back in order to permit the contents of the reservoir to be drawn off when desired and the reservoir cleaned.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes may be made in the form, proportion and minor details of construction, without departing from the spirit of the invention or sacrificing any of the advantages.

What is claimed is:

1. A window cleaner comprising a flexible washing member having an apertured arched wall, end pieces closing the ends of said arched wall and set back from the end edges thereof, and a back coöperating with said washing member to form a reservoir.

2. A window cleaner comprising a flexible member having an arched apertured wall, end pieces closing the open ends of said arched wall and spaced from the end edges thereof, projections formed upon the longitudinal edges of said arched wall and end pieces, and a back engaging said projections whereby to form a reservoir within the washing member.

3. A window cleaner comprising a washing member having an arched flexible wall provided with an opening leading through its working face, end pieces forming closures for the open ends of said arched wall and spaced from the end edges thereof, flanges projecting laterally from the longitudinal edges of said arched wall and end pieces, the flanges of each end piece being sufficient in width to extend to or nearly to the plane of the adjacent end edge of said arched wall whereby to reinforce and strengthen the end pieces to resist the yielding of the arched wall, and a back having marginal clamping portions for engagement with said flanges whereby to form a reservoir within the washing member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WALTER E. ALLEN.

Witnesses:

R. L. Mayfield,

F. M. Teller.